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Advanced Management

MODERN MANAGEMENT

TIME STUDY AND METHODS CONFERENCE

IN THIS ISSUE

- Conference Highlights
- Executive Development
- Business Films for Managerial Purposes
- Time Study and Effort Rating
- Scientific Plant Layout
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APRIL 1952

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Remington Rand INC.

Volume XVII Number 4
April, 1952

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New Areas Of Application Highlight Conference

SAM presents a group of specialists in fields of operative management who will evaluate broader applications of a scientific technique.

PRACTICAL METHODS, improved techniques and the latest research in the field of Time Study will be the theme of the Seventh Annual Time Study and Methods Conference to be sponsored by the Society for Advancement of Management, Inc. and the management division of the American Society of Mechanical Engineers.

S.A.M. and A.S.M.E. have issued a call to more than 35,000 men in management to attend the conference which will be held at the Hotel Statler, New York City, April 24 and 25, 1952.

The Conference headline speakers are Walter H. Wheeler, Jr., President of Pitney-Bowes of Stamford, Conn., Henderson Supplee, Jr., Executive Vice President of The Atlantic Refining Company of Philadelphia and Roger L. Putnam, President and Chairman of the Board of the Package Machinery Company of Springfield, Mass., currently serving as Economic Stabilization Administrator in Washington, who will discuss the "Current Economic Outlook."

Meeting twice, the Time Study and Methods Program Committee of S.A.M., composed of co-chairmen A. J. Bergfeld and H. B. Maynard with F. W. Hornbruch, Jr., Paul J. MacCutcheon and Lawrence L. Parrish as members, completed the selection of all topics and all speakers for the conference.

This was accomplished with the cooperation, contributions and suggestions from thirty-three S.A.M. Chapters who participated in building the program by proposing a wealth of material to choose from—a total of one hundred and fifty-one speakers. This selection enabled the Committee to build a program which has a nation wide coverage of outstanding speakers.

The National Office Staff is responsible for the details of programs, promotion, registration, and all other arrangements.

The program is an integrated one. The first part is built upon the application of methods and techniques and the second part reports the latest important research in the field of time study and methods study.

CONFERENCE COMMITTEES

The General Conference is under the direction of A. J. Bergfeld, Partner of Stevenson, Jordan & Harrison, Inc., and H. B. Maynard, President of the Methods Engineering Council. The program of speakers was arranged by Frederick W. Hornbruch, Jr., Chief Engineer of Rath & Strong, Inc. Paul J. MacCutcheon, Chief Industrial Engineer of Nestle's Chocolate Company is in charge of publicity. The treasurer of the Conference Committee is Bruce Payne, President of Bruce Payne Associates. Lawrence L. Parrish, Associate Professor of Industry and head of the Department of the University of Connecticut, will be in charge of all arrangements of the Committee. H. A. Cozzens, Jr., Adjunct Professor of Administrative Engineering of New York University is in charge of the Reception for the Conference.

THURSDAY SESSIONS

The Conference will be opened Thursday, April 24 at 9 A.M. by the Conference Chairman A. J. Bergfeld of Stevenson, Jordan & Harrison, Inc., after which the meeting will be turned over to Phil Carroll, Professional Engineer, who is chairman of the Thursday morning session. Mr. Carroll will introduce the speakers for this session.

The Thursday luncheon chairman will be Frederick W. Hornbruch, Jr., Chief Engineer of Rath & Strong, Inc. Mr. Hornbruch will introduce the speaker for the luncheon who will be Walter H. Wheeler, Jr., President of Pitney-Bowes, Inc. Mr. Wheeler will have as his topic "How Time Study and Methods Techniques Help Members of Top Management Fulfill Their Responsibilities to THEIR CUSTOMERS".

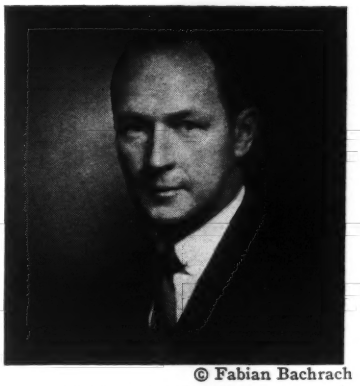
Mr. Wheeler will make clear that the customer is entitled to the fullest measure of value that can be provided. Management's responsibility is the best possible product for the least possible money. Detailed cost estimates, built from predetermined time standards, point out high cost components which are then redesigned for low cost production. The customer is assured of price stability through the development of pre-production standard cost estimates and subsequent control of actual cost by comparison with those standards. Industrial engineers can guard against the customer's having to pay for the cost of controllable waste and inefficiency and help top management fulfill its full responsibility — that of giving the customer his money's worth.

Presentation of the Industrial Incentive Award will be made at this luncheon.

The Chairman of the Thursday afternoon session is Lawrence L. Parrish, Associate Professor and head of the Department of Industry of the University of Connecticut. Mr. Parrish will introduce the speakers for the afternoon session.

The dinner session will be held at 7 P.M. Thursday, April 24th in the Grand Ballroom. Leon J. Dunn, As-

CONFERENCE HEADLINERS



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HENDERSON SUPPLEE, Jr.
Executive Vice President
The Atlantic Refining Co.

ROGER L. PUTNAM
Economic Stabilization Administrator
Washington, D. C.

WALTER H. WHEELER, Jr.
President
Pitney-Bowes, Inc.

sistant to the Executive Vice President of Veeder-Root, Inc. and National President of the Society for Advancement of Management will be the Chairman of the session. The speaker for the evening will be Roger L. Putnam, President and Chairman of the Board of the Package Machinery Co. of Springfield, Mass. Mr. Putnam was recently appointed Economic Stabilization Administrator by President Truman. His rich administrative background in industry, finance, government and public service qualify him exceptionally well to serve in his position of national significance as Economic Stabilization Administrator. Mr. Putnam will review the past, explain the present, and project the future of price stabilization. His thinking and recommendations will have a direct effect on all economic activity during the years of defense preparation.

FRIDAY SESSIONS

Paul J. MacCutcheon, Chief Industrial Engineer of the Nestle's Chocolate Company is Chairman of the morning session on Friday, April 25. This session will also be held in the Grand Ballroom.

The Friday luncheon will have Bruce Payne, President of Bruce Payne Associates, Inc. as the Chairman. Mr. Payne will introduce Henderson Supplee, Jr., Executive Vice President of The Atlantic Refining Company who will speak on the subject of "How Time Study and Methods Techniques Help Members of Top Management Fulfill Their Responsibilities to THEIR STOCKHOLDERS".

Mr. Supplee will direct his talk toward efforts being made in the Atlantic Refining Company to integrate these techniques with broad programs such as operation analysis, organization planning, policy formulation, and short and long range planning of operation and capital investments budgeting, and other programs aimed at cost reduction or improved performance—all this toward the end of discharging managements' responsibilities to the stockholder.

The Friday afternoon session will have as its chairman Eugene E. MacNiece, Superintendent of Quality Control of Johnson & Johnson. Mr. MacNiece will introduce the afternoon speakers.

Following all four sessions there will be a full discussion of all topics of the sessions. H. B. Maynard, President of Methods Engineering Council will make a summation of the conference on Friday at 5 P.M. The S.A.M. film "Study on Performance Rating" will be shown in the Georgian Room following all sessions.

STEVEN L. PALMERT
Chief Industrial Engineer
Whirlpool Corporation

DONALD H. DALBECK
Treasurer and Controller
Reed-Prentice Corp.

ANDREWS M. LANG
Executive Secretary
MTM Ass'n for Standards & Research

HUGH A. BOGLE
Supervisor Management Engineering
E. I. duPont de Nemours & Co

SESSIONS SPEAKERS AND SUBJECTS

The Thursday morning, April 24th sessions will include the following speakers:

The application of Time Study and Methods to COST CONTROL will be discussed by James E. Newsome, S.A.M. member and Superintendent of Johnson & Johnson in Chicago, Illinois. Mr. Newsome will highlight his talk with five advantages that TS & M can give to the Production Manager: the attainment of uniformity in cost standards between units and departments, increased accuracy in cost controls, a guaranteed continuity, a new area of cost standard usability, and an easy way to obtain employee cooperation.

Donald H. Dalbeck, Treasurer and Controller of Reed-Prentice Corp., manufacturers of plastic injection machines, die casting machines and portable timber saws of Worcester, Mass., will handle the PRICING AND UNIT COST and the application of TS & M to this topic. He contends that Time Study to a great extent, pre-determines what the Unit Cost will ultimately be. It, therefore, is important that Time Study be intelligently applied before the results have become history in the form of Unit Costs.

The application of Time Study and Methods to SALES AND DISTRIBUTION will be discussed by Noble Hall, Manager of the Sales Research Division of The Atlantic Refining Company of Philadelphia and a member of the Philadelphia Chapter of S.A.M. Mr. Hall will give a report on the application of industrial engineering techniques concerning the distribution field techniques applying to manpower efficiency, product delivery, truck dispatching, selling methods at the retail level and the selling time of salesmen. Examples of savings will be given and an explanation of how these various studies tie in to an integrated program of expense control. Emphasis will be placed on the importance of this new frontier for our industrial engineers — a frontier where they can start afresh.

THURSDAY P.M. SESSION

The Thursday afternoon, April 24th sessions will include the following speakers and their subjects:

PLANNING, SCHEDULING, INVENTORY will be the subject of Steven L. Palmert, S.A.M. member and Chief Industrial Engineer of the Whirlpool Corporation of St. Joseph, Michigan. He will point out the use of TS & M in connection with his subject and show how it can aid the planning and scheduling of equipment, material and manpower.

Don F. Copell, S.A.M. member and Vice President, Engineering and Personnel Training of the Wagner Baking Corporation of Newark, New Jersey will cover the application of Time Study and Methods to TOOLS, EQUIPMENT AND LAYOUT. Mr. Copell will present a film showing actual applications and charts showing the results of these applications. He will also point out how a Work Simplification Training Program and an Engineering Department can work with the Production Department to conceive, develop and install better tools, better equipment and better layouts.

Conference Information

SESSIONS

Sessions of the Time Study and Methods Conference will be held in the Grand Ballroom of the Hotel Statler in New York City. The S.A.M. film "Study on Performance Rating" will be shown in the Georgian Room of the Statler.

REGISTRATION

To avoid waiting in line and to assure your attendance at all sessions and meals, complete the registration blank immediately which can be found on the back page of this issue of ADVANCED MANAGEMENT or the one enclosed in your flyer announcing the Conference. Return the completed registration blank and your check to the Society for Advancement of Management, 411 Fifth Avenue, New York 16, New York. All registrations will be acknowledged and tickets mailed up to 1 week before the Conference. You may take advantage of a discount in rates if your registration is received and paid in advance of the Conference. If the registration is paid in advance your discount will be $2.50 off for the Full Conference, including meals, $1.50 off for the Full Conference, excluding meals, and $1.00 off for any one session, luncheon or dinner.

HOTEL ACCOMMODATIONS

Reservations will be accepted and confirmed by the National Office of the Society until the rooms assigned for this conference have been exhausted. Those wishing accommodations communicate with Reservation Manager, Society for Advancement of Management, 411 Fifth Avenue, New York 16, New York.

PRESS REPRESENTATIVES

Members of the Press will find releases and working facilities in the Press Room (adjoining Parlor 2 in Foyer).

GENERAL

Business Dress will be worn by speakers and audiences at all Sessions, Luncheon Meetings and Banquet.

MEMBERSHIP AND PUBLICATIONS

Information may be secured at the Information Desk in the Foyer or at the Headquarters of the Society.

K. O. WILLIAM SANDBERG
Chief Industrial Engineer
General Electric Company

DAVID B. PORTER
Professor of Industrial Engineering
New York University

CORNELIUS J. CROWLEY, JR.
Manager, Material Handling Dept.
The Singer Manufacturing Co.

JAMES E. NEWSOME
Superintendent
Johnson & Johnson

OFFICE AND CLERICAL WORK will be the subject discussed by Ben S. Graham, S.A.M. member and Chairman of the Future Demands Committee of The Standard Register Company of Dayton, Ohio. Mr. Graham will point out ways and means of producing prompt, accurate records and reports as efficiently as possible, a fundamental approach to the elimination of waste, and the application of management to evaluate the results.

FRIDAY A.M. SESSION

The Friday morning, April 25th sessions will include the following three speakers:

MAINTENANCE and the application of Time Study and Methods will be the subject for Hugh A. Bogle, S.A.M. member and Supervisor of Management Engineering of the Consulting Section of E. I. du Pont de Nemours & Company of Wilmington, Delaware. Mr. Bogle will point out that the introduction of technological improvements to equipment and processes has resulted in large increases in the rate of maintenance and these increases have in turn resulted in greater productivity. Both methods improvements and time study are currently employed in the establishment of better controls for the reduction of maintenance costs.

DON F. COPELL
Vice President, Engineering and
Personnel Training
Wagner Baking Corp.

INSPECTION and the application of TS & M to it will be discussed by W. R. Overbey, Motion Time Analysis Supervisor of the Carter Carburetor Company of St. Louis, Missouri. Mr. Overbey is a member of S.A.M. affiliated with the St. Louis Chapter. He will show how time study and methods can apply successfully to inspection and how properly designed gauges and the right gauges to use must be foremost in the time study and methods man's mind. From a cost standpoint the correct selection is usually as important as the proper design of tools and fixtures in machining operations.

NOBLE HALL
Manager Sales Research
The Atlantic Refining Co.

BEN S. GRAHAM
Chairman, Future Demands Committee
The Standard Register Co.

CHESTER L. BRISLEY
Industrial Engineering Manager
Calumet and Hecla
Consolidated Copper Co.

WILFRED R. OVERBEY
Motion Time Analysis Superintendent
Carter Carburetor Company

The application of TS & M to MATERIAL HANDLING will be discussed by Cornelius J. Crowley, Manager of the Material Handling Department of The Singer Manufacturing Company of Elizabeth, New Jersey. Mr. Crowley will point out that all Material Handling is transportation. The role of TS & M and Material Handling departments and the cooperative procedures required by these departments in effecting efficient operations will be discussed and evaluated.

FRIDAY P.M. SESSION — RESEARCH REPORT

Friday afternoon, April 25th will be devoted to research and the new technical developments in time study and methods techniques.

RATIO DELAY DEVELOPMENTS will be discussed by Chester L. Brisley, S.A.M. member and Industrial Engineering Manager of the Wolverine Tube Division of Calumet and Hecla Consolidated Copper Company of Detroit, Michigan. Mr. Brisley will highlight the periodic studies that have been made of various categories of "down time" and the effort made by methods improvement to reduce the "down time" and increase the normal machine cycle time. He will also show how the Ratio Delay technique as a new tool of Work Simplification has been used in his company for the last three years.

RESEARCH REPORT ON THE PROBLEM OF MACHINE INTERFERENCE will be presented by K. O. William Sandberg, S.A.M. member and Chief Industrial Engineer of the Chemical Division of General Electric Company of Pittsfield, Mass. Mr. Sandberg will show how interference delays occur when one operator is assigned to several machines. The determination of this amount of productivity lost has been the subject of many investigations. It has been found possible in many cases to balance out this loss in machine productivity against other losses such as operator idleness in order to calculate an economic assignment. Algebraic formulae can be derived from geometric plots when applied to situations where the machine running times and operator running times are nearly consistent.

MTM ANALYSIS OF PERFORMANCE RATING PROCEDURES will be covered by Andrews M. Lang, Executive Secretary of MTM Association for Standards and Research of Pittsburgh, Pa. Mr. Lang will show what a valuable tool of work measurement MTM can be and will explain various ways of analyzing aspects of the performance rating procedures.

David B. Porter, Professor of Industrial Engineering of New York University, New York City and S.A.M. member, will present RECENT RESEARCH ON S.A.M. RATING FILMS. Professor Porter will tell what the recent research has covered and the subjects which will be delved into in the research. The films will be shown after each of the four sessions.

FEATURES

As noted before, the S.A.M. film "Study on Performance Rating" will be shown after each session in the Georgian Room in the Hotel Statler. Expert counsellors will be on hand to explain all phases of Performance Rating during the showing of the films. New charts and new tables have been designed to simplify and to speed up rating computations of the correct rating for your time study system. Important parts of the revised manual will be available. The new tables will permit direct reading of the correct rating for each scene of each operation for all rating systems.

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Incentive Compensation Develops Executives

By ARCH PATTON
McKinsey & Company

The need for executive talent is real and increasing. The problem of finding and training these men is becoming steadily more pressing. Here is an opinion backed by research.

ORGANIZED efforts by individual companies to develop executive manpower has spread rapidly in recent years. The shortage of executive talent that resulted from inadequate executive training during the World War II, and the prior depression of the thirties, has been greatly accelerated by the huge Post-Korean expansion of industry.

The extent of industry's expansion in the past decade is sometimes overlooked. A recent survey by McKinsey & Company, the management consulting firm, showed that the average large company increased its payroll over *50 percent* between 1939 and 1950. One company in four more than doubled the number of people employed during this period.

So the *need* for executive talent is real; and increasing. The problem of finding and training these men is becoming steadily more pressing. Today many of the country's most forward-looking and aggressive enterprises — Sears-Roebuck, Johnson & Johnson, Standard Oil of New Jersey, Chrysler, du Pont, Socony-Vacuum, U. S. Rubber, Monsanto Chemical, RCA Victor, Ford Motor, to name some of the leaders — have launched executive development programs.

These organized executive training efforts include many new and useful techniques. Job rotation is used to provide specialists in one function with operating experience in another function. Executives are sent to leading business schools for "refresher" courses that will broaden their understanding of company problems. "Junior" boards of directors, patterned after McCormick & Company's famous plan, are being increasingly used to prepare younger executives to think creatively on a company-wide basis. Executive methods "round tables" permit a cross-pollination of executive skills. Training meetings that include executives from the various operating and staff functions are being used (a) to acquaint executives with new and progressive ideas by presenting top-flight outside experts as speakers, and (b) to create greater internal esprit and understanding by having company executives get to know each other better as individuals.

THE MISSING ELEMENT

These and many other executive training devices unquestionably *help* develop a better management team. However, there is a growing belief that an important element is missing in many executive development programs. For want of a better definition this might be called a lack of top management participation.

To be sure, top management appropriates money, and designates some executive as responsible for advancing the executive development program. Frequently, top management takes a hand to the extent of attending meetings and conferences. But top management rarely accepts the same degree of responsibility for executive development that it does, for example, where a plant or product expansion program is concerned.

THE NEED FOR TOP MANAGEMENT PARTICIPATION

The reason top executives shy away from active responsibility for executive development may be that they don't quite understand the steps to be taken, or the end result to be anticipated. An expansion program involves market potentials, building costs, competitive pressures, labor and raw material availability: things an executive can sink his teeth into. But there are few such tangibles where executive development is concerned. Instead, the elements of a development program include such factors as: position definition, executive appraisal, executive replacement inventories, and plans for individual development. Top management frequently finds it difficult to translate this terminology into a realistic action program.

It is at this point, in the opinion of many observers, that top executives turn their attention to other problems; sales, manufacturing, or something equally tangible. Executive development programs frequently involve off-the-job or on-the-job training that many operating executives find unrealistic. They often include performance appraisals that have little relation — in the opinion of top operating executives—to the basic profit factors involved in individual jobs.

In other words, when the executive development problem is turned over to lower echelons, the lack of active top management participation sometimes results in the program losing touch with realities. As one personnel vice president ruefully put it, "The lack of operating management participation means we are working in a vacuum, on problems we can not solve".

One of the most effective ways to implement an executive development program is to use incentive compensation at the executive level. The construction and administration of an incentive compensation plan helps top management more effectively to appraise executive contribution to profit in realistic, dollar terms. Plans for improving

executive performance are easier to frame if a realistic yardstick, tailored to the company's needs, exists for measuring individual performance.

INCENTIVE COMPENSATION AS AN AID

These benefits can be derived only from a *successful* incentive plan. A careful analysis of many plans shows that successful incentive compensation almost always has these features:

1. Payment should be made on the basis of an individual executive's contribution to company profit, *not* salary.

2. The company should be organized so that individual responsibility for profit is as clear-cut as possible, permitting realistic evaluation of individual contribution.

3. The bonus should be substantial, and specifically related to profits.

These factors ensure the participation of top management in an incentive compensation plan. The relatively substantial amount of money paid to executives under such a plan, the need for top level judgment in making the allocation to individuals, and the organizational adjustments frequently required all involve the active participation of the chief executive.

But it is the second of these requirements—the need to judge profit contribution—that provides the link to executive development. A *successful* incentive compensation plan necessitates:

1. The development of yardsticks to help measure executive contribution to profits.

2. Applying mature judgment to these yardsticks to arrive at a dollar and cents evaluation of each executive's contribution.

3. Notifying executives at least once each year of top management's appraisal of their profit contribution, if only by passing out the bonus check.

4. Taking action to weed out ineffective executives, or promoting effective men.

In other words, a successful incentive compensation plan focuses top management attention on the factors that make a good executive, or a poor executive. It forces top management to constantly appraise executive contribution to profit, and to base rewards on the effectiveness, profit wise, of the individual. In effect, it forces better management.

HOW INCENTIVE COMPENSATION DEVELOPS EXECUTIVES

To clarify the part played by an incentive bonus plan in developing executives, it might be helpful to examine, step-by-step, the salient features found in a successful plan. At the same time, we can consider the relationship between the factors entering an incentive compensation plan and the development of executives. The basic factors in a successful plan might line up about as follows:

1. *The bonus "Kitty" relates to profits:* All executives eligible to share in the bonus are notified that if their combined efforts produce a specified profit, the group share will be a certain proportion of the total. This sharpens the profit consciousness of executives as a group, and identifies their interest with the stockholders. Since the reward is tied to profits, both the money-saving and money-making instincts of executives are alerted.

When General Motors notifies all employees that those earning over $6,000 annually are eligible for a bonus, and that the bonus fund will be 12 percent of net profits after 5 percent is earned on invested capital, several desirable motivations are provided:

(a) Knowing that the plan is generous, men will work hard to become eligible.

(b) Once eligible, men know that as the company prospers, their potential share increases, so they continue to work hard.

(c) And finally, since bonus payments are based on individual contributions to company profits, an executive is strongly motivated to make the greatest possible contribution to profits.

2. *Eligible executives know how they are judged:* In a sound incentive plan, each executive knows the elements in his job upon which his profit contribution will be judged. This has been worked out *beforehand*, so he *knows* the rules of the game he is playing. Furthermore, performance in each of the specific profit factors that make up his job will be reviewed with him several times during the year, if the management is to get the most out of its plan.

For example, a production manager's profit responsibilities might be listed in part as follows:

(a) Unit cost, by product, in terms of budgeted sales

(b) Quality of product, in terms of rejects and complaints, against standards

(c) Meeting delivery schedules

(d) Utilization of facilities for lowest cost output. Under each of these headings, many individual yardsticks could be fashioned. Their number and value would depend on the company.

Knowing that he is going to be judged against such specific criteria, the incentive among the executive group for on-the-toes performance is increased.

By isolating the profit factors in a job, and reviewing individual performance, top management offers its executives the finest kind of on-the-job training. From the executive's viewpoint, there's a tangible financial incentive to correct weaknesses. The company benefits by more quickly spotting weakness, and correcting it; or strength, and using it.

3. *Bonus payments based on individual contribution:* This is the most difficult — and important — element in a successful bonus plan. While top management judgment is essential in determining the relative profit contribution of the various executives in a company, the development of yardsticks that provide a factual basis for such judgment is equally necessary. Plan after plan has failed because the average executive felt personal bias was substituted for fact-founded judgment in his case.

BASIS OF YARDSTICKS

These yardsticks of performance may assume many forms. They may be based on budgeted results, on standard cost variances, on competitive relationships with other companies or departments, on qualitative measurements, or on some other factual measure. But in the final analysis they must be tailor-made to fit a particular company AFTER considerable study of the profit potential in an individual executive's job.

This in itself is a seven-league step along the road to executive development. A management that has studied the profit potential of a job sufficiently to work out reasonable performance yardsticks probably knows enough about it to judge an executive's performance. This alone would provide a reasonably

solid basis for training and developing an executive. In any event, it offers the hard core of reality that seems missing in so many executive development programs.

4. *Policing an incentive plan's results:* There are indications that high among the reasons for the failure of many bonus plans is the unwillingness of top management to "police" the plan. If lower management finds in top management *action* reason to believe that an objective, profit-rated approach to bonus decisions is not followed, they are quick to take this easier, "rational" approach themselves. This will mean bonuses established on some give-and-take basis that gives undue weight to salary or years of service; neither of which necessarily results in unusual profit contributions on the part of an executive.

The president of one large company has countered this tendency by insisting (a) that each executive is responsible for the bonus recommendation affecting *every* subordinate in his organization (no matter how far down), and (b) that every bonus recommendation be accompanied by a dossier of unusual contributions of the individual. This chief executive polices the bonus plan by asking probing questions about bonus recommendations, and insisting on full answers based on all available facts. Men who consistently receive above-average bonuses have top priority for promotion. Men who do not receive bonuses in a good year are "on notice" that their performance had better improve.

TIME IS ESSENTIAL

Companies with productive bonus plans say that time is an essential factor in success. The reason seems to lie in the years needed to ensure that the executive group *believes* in top management's sincerity. This means that for a considerable period an incentive plan is on trial — and so is top management. Actions that strengthen belief in the incentive nature of a bonus plan are essential. Creative, profit-making executives must be adequately rewarded, both financially and in terms of responsibility. Similarly, laggards need to be realistically dealt with if real incentive is to be imparted to the executive group.

When carried forward by an enlightened management, such policing action becomes in itself a means of developing executives. If your executives are raised in an atmosphere where unusual contribution to company profit is quickly followed by cash and responsibility rewards, they soon learn the meaning of competition. The army's policy of spot promotions in the field for action "beyond the call of duty" makes use of the same training principle. Other men can see the favorable results of desirable action — as soon as possible after the event — hence are likely to be inspired to emulate the action thus rewarded.

INCENTIVE COMPENSATION'S PLUS VALUES

McKinsey & Company recently conducted a survey of executive compensation in which more than 50 large companies took part. It was interesting to observe, in industry after industry, that the company paying its policy-making executives the highest compensation also reported the greatest increase in profits between 1939 and 1950. The opposite was also true with significant regularity; that below-average top management compensation, or below-average *increases* in their compensation during the 11 years seemed to yield subnormal profits.

This study was too limited in scope to be considered *proof* that better-than-average financial motivation results in greater profits. But it lends support to the finding of the American Management Association Executive Compensation Survey that the writer directed a few years ago. This study, including some 650 companies, also indicated that above-average compensation accompanies above-average profit gains with sufficient frequency to be significant.

If the thesis that relatively higher executive compensation means greater profits in the long run is valid, company directors who regard executive compensation as an expense like insurance or the hourly payroll are not being realistic. It is like expecting a locomotive to exert full power with the throttle half open. Many well-managed companies take advantage of this motivation possibility by attempting to keep their executive compensation 10 percent or 15 percent above the average in their industry or geographical area.

Obviously, to be effective, such a policy requires that the company *get more creative effort* from its executive group in return for this greater compensation. Weeding out poor performers is implicit in this responsibility. Paying mediocre men more money is unlikely to do the trick.

A well-thought-out incentive compensation plan provides the motivation and controls so essential to attaining this objective. Such a plan makes it possible to pay above-average compensation and ensure above-average performance, for only superior performance is rewarded. A collateral advantage of incentive compensation is that base salaries can be kept at a reasonable level, with good profit years adding materially to executive take-home and unprofitable years finding the total executive payroll a relatively smaller burden.

CONCLUSION

There can be little doubt that a shortage of trained executive talent exists, or that the shortage will become increasingly acute. Furthermore, there is reason to believe that the usual executive development program leaves something to be desired as a solution. If top operating men raise their eyebrows when such development programs are discussed — which they appear to do with considerable regularity — it may well be that a different approach to the problem is needed.

I believe a strong case can be made for building executive development around an incentive compensation plan. Certainly those companies with good incentive bonus plans seem to have less trouble attracting and keeping top quality executives than is generally the case. Having studied the executive motivation efforts of several hundred companies, it is my opinion that this results largely from the *improved management that accompanies incentive compensation.*

When a chief executive decides to establish an incentive compensation plan for his executives, he necessarily decides to give up some of his own pleasant vices — if the plan is to be successful. He must know everything possible about the profit responsibilities of individual executives, for he has to judge their performance against realistic potentials. He must delegate authority—which he sometimes likes to retain—as well as responsibility. He must appraise

performance with great care—and little prejudice—for one bad example of overrewarding or underrewarding may destroy the faith of the executive group in the plan.

But having decided to use this mighty —if little understood—weapon, the chief executive almost automatically will start developing better executives. By studying the profit components of the individual jobs, he will find it easier to show executives what is expected of them. By appraising their performance against these profit responsibilities in terms of specific yardsticks (bearing in mind always that *judgment, supported by facts,* is the key to success), he will be able to show executives where their training needs lie. By rewarding individual executives in proportion to their profit contribution, he will ensure a speedy development of profit-making, competitive instincts. By policing the plan, he will promote his profit-producing executives and prevent laggards from blocking good men.

Examined in this light, the development of incentive compensation as a means of developing executives has more than passing interest.

COMMUNICATIONS

Screen Communication In Business Management

By FRANCIS LAWTON, JR.

Management Engineer, Film Application Specialist

This article covers a new feature in the field of management engineering — the development of specialized film application.

LONG AGO, Victor Hugo wrote that "there is one thing stronger than all the armies in the world, and that is an *idea* whose time has come". One example of such an idea is that those who make, use, exhibit, equip and service motion pictures, slidefilms and their accessories, for Screen Communication in Business Management, would be still more successful and prosperous if they could devise standards of application and terminology that would be mutually accepted and uniformly understood by all concerned. This applies wherever there is a need for conveying information, understanding and guidance from top management down through personnel, or to the trade and public.

The need for such standardization was sharply illustrated in a leading business film trade paper, by the publication of statements from 101 business film producers summarizing the variety of their services to users. In this article, 57 different terms were used to describe ten fundamental applications of Screen Communication by motion pictures, slidefilms and accessories, to the basic functions of business management. Many of the terms used were so vague as to have no basic significance whatever, and some of the basic applications were not listed at all. Perhaps the simplest example of all involves the slidefilm, which is currently called by four different names.

COMMUNICATION NEEDS

Over four thousand business concerns, all over the country, use Screen Communication by motion pictures, slidefilms and accessories; in administration, production and marketing. Less than one in a hundred of these users employ all of the established film applications for benefit and profit. More than forty thousand other concerns, with similar needs and opportunities, make no use of Screen Communication whatever, presumably because they are unaware of it or did not understand it correctly and completely.

In a letter to stockholders, the president of a world wide corporation wrote of the increasing difficulty of communicating the governing ideas of management throughout a large and far flung business organization. Charles F. Kettering of General Motors put it in a nut-shell when he said "You can send a message around the world in one-seventh of a second, yet it may take years to force a simple idea through a quarter inch of human skull".

The application of Screen Communication to this difficulty began in 1894, when National Cash Register's guiding genius, John H. Patterson, used sets of stereopticon slides to visualize speakers' points in training sessions and sales presentations. He built the first commercial motion picture studio on his factory roof, before artificial lighting methods had been devised for film production.

SCREEN COMMUNICATION PRECEDENTS

Now, as previously stated, thousands of representative concerns of all sizes, in every kind of business from General Motors to General Foods, and Standard Oil to Standard Brands, use Screen Communication by motion pictures and slidefilms of one kind or another, for one or more purposes of improved communication with personnel, trade and public, as one of their "machine tools" of management. While tragically few use them all, these users have collectively established a complete set of precedents for every function, form and channel in which the sound picture screen is superior to any alternative medium of communication for information, demonstration and instruction purposes.

There are several reasons for this superiority. First, the speaking screen

is the only medium that can reproduce a reasonable facsimile of the originators train of thought in sight, sound, action and continuity, just as he sees and hears it in his mind. This saves him the difficulty of laborious and faulty description, while sparing listeners the agony of mental reconstruction and the probability of misunderstanding.

Second, a lighted screen in a darkened room forces concentration and eliminates distraction. Third, a Screen Communication can be presented simultaneously in many places, and "road showed" in others, farther and faster than one or many speakers could present it in person, and at a fraction of the cost. Fourth, repetition to new personnel and review with others costs nothing at all. These favorable comparisons could go on indefinitely, but the general idea is sufficiently clear.

OBSTACLES TO UNDERSTANDING

The gist of it is that there is an acknowledged need for better management communication, a proven means of bettering it at less cost for greater benefit, and some mysterious obstacle to their getting together more generally. In looking for causes of this mystery, we encounter misdirection, sales resistance and lack of standardization.

Misdirection in the theatre, because selling tickets and entertainment is different from selling goods and ideas. Misdirection by sample films of other peoples' business, because the observing prospect knows nothing about it. Sales resistance against solicitation by producers, because of diversity of competing presentations, fear of unknown complications and inability to calculate result values. Lack of standardization of users' and producers' principles, terminology and methods, because many sales are still made with emotional appeals rather than logical analysis, and much film buying and selling continues on a trial and error basis.

TEN BASIC APPLICATIONS

These difficulties will be greatly reduced, and eventually eliminated, as Screen Communication becomes better, more uniformly and more widely understood by Top Management, Functional Management and Management Engineers. The ten basic applications are as follows:

IN ADMINISTRATION

Executive Coordination

Subject films in the areas where understanding must be uniform, regardless of individual initiative and local discretion, reduce preventable faults of autonomy and "home rule".

Clerical Instruction

Enacting the whole routine operation from start to finish, and dramatizing the relation of each step to each participant and the end result. To make interested team-workers of indifferent drudges.

IN PRODUCTION

Manual Training

Communicating background knowledge and fundamental understanding by observation and demonstration. To prepare beginners for faster learning and better performances in supervised practice.

Employee Relations

Demonstrating facts and dramatizing understanding *without* antagonism. To reduce preventable deception and misunderstanding, and increase enlightened loyalty.

IN MARKETING

Product Demonstration

Observation of the most expert demonstration amplified by animation and other synthetic effects. To improve personal demonstration, and increase appreciation.

Sales Training

Dramatizing the best methods of all for the benefit of each. To raise the average of performance and increase sales.

Dealer Promotion

Lessons in merchandising and selling based on the sponsor's ideas. To help make merchants of store-keepers, and salespeople of their clerks.

Consumer Selling

Sales presentation using sight, sound, action and continuity to gain conviction. To enable prospects to share the understanding of users.

Consumer Advertising

Display advertising animated and audiented. Word-of-mouth advertising photoplayed. To improve upon silent and motionless text, and sightless broadcast sound.

Public Relations

Dramatized institutional publicity. Visualized, audiented and activated annual reports. To increase general understanding, and improve public attitudes toward sponsor.

EXAMPLES OF ADMINISTRATION FILMS

A bird's eye view of some of the main Functional Film Applications may be of interest. As one kind of *executive coordination* picture, take the case of a great manufacturing company with world-wide operation. In some countries they had assembly plants, while others were covered by distributors. The territorial and functional managements agreed that assembly plants would be best for all territories. The change-over would cost many million dollars. The problem was to get approval and money from Top Management, involving understanding and agreement among the several members of its governing committees. The first six figure commercial movie in history did the job, by taking them around the world on a mental tour of inspection—without leaving their seats.

Another example of *executive coordination* worked in the opposite direction. Seven leading companies making retail merchandise marketed through similar channels, to similar customers, were consolidated. The objective was to have all seven groups of newly affiliated personnel understand the new single set-up in the same way—completely and correctly. An inexpensive silent slide film served the purpose adequately.

An unexpected twist in the case of a *clerical instruction* film involved a large nationally operating company. They wanted to improve clerical work in branch offices, where the personnel was violently sales minded and slightly cool toward paper work. Scenario data was collected at the home office, and the script written there. The client informed the producer afterward that this operation alone brought to light laps, gaps and defects in their routines which resulted in a saving of ten percent in their clerical expense, and several improvements in their operation. The film also got highly commended results in the branches, as originally intended.

EXAMPLES OF PRODUCTION FILMS

Much has been heard about *manual training* films, especially in the armed services and war production industries.

All the way from girls learning to use micrometers to skilled mechanics learning new operations, with time and motion studies by slow motion pictures now and then. Of course, films alone cannot impart manual dexterity, but they do implant background knowledge and fundamental understanding that helps to acquire it sooner and better in supervised practice.

One of the most remarkable things about the many successful *employee relations* films is their freedom from antagonism. Apparently, truth and logic dramatized on the screen fail to arouse the denial and dispute so often prompted by similar subjects in other forms of communication such as personal speech and printed text. Many large employers now acknowledge films as valuable aids to good labor relations.

EXAMPLES OF MARKETING FILMS

How a product is made and how it works, what it does and what good that is, can be given a *product demonstration* most convincingly from the screen. An adding machine company did it way back in 1918, with the aid of natural photography and synthetic animation, far better than would be possible for any human demonstrator. Convenience is another factor, making it possible to put a power shovel through its paces in the comfort and privacy of an office. These early examples are used to emphasize how long this has been going on.

Sales training films are probably more numerous and better understood than any other classification. They can dramatize the sales manual, and photoplay the best methods in actual use, for effortless understanding and easy emulation, even on the lower levels of ability. Some users seem to think that any sales meeting is incomplete without visual aids of one kind or another. An important factor is the centralized control of instruction with resulting uniformity of understanding and action everywhere.

Motion picture and slidefilm lessons in merchandising help in *dealer promotion* efforts, to make merchants out of storekeepers and salespeople of their clerks. Naturally, the photoplay episodes feature the sponsors merchandise, thus getting it more sales effort than other things in stock. The general sales increase that usually follows, makes the dealer more favorably disposed toward the sponsor and his goods.

The most successful *consumer selling* films have usually dramatized a product or service conferring its benefits upon users after purchase. This might be called the "after" version, of which the demonstration picture is the "before" version. The distinction is important to Functional Executives, because it enables them to have the *consumer selling* picture tell what the prospect wants to know, while giving their seniors a little leeway in the *product demonstration* picture to indulge in what they want to say.

The big fact about *consumer advertising* films is that they can come nearer than any other medium of communication to the closest approach to word-of-mouth advertising. Advertising media sellers have never feared to admit that word-of-mouth advertising is the best advertising of all, because they never dreamed until recently that it would ever be commercially available. Now, however, it can be reproduced in motion picture photoplay form, and multiplied in the minds of observers by the million, through non-theatrical, theatrical and television exhibition.

Modern *public relations* pictures have come a long way from their early form of a trip through the factory. The institutional films of today take us down interesting paths of social and economic observation. In them we see many broad contributions of well being, happiness and prosperity by some important concern to its own people and community, its customers, trade and public. Such pictures usually range from ten to thirty minutes in length, the former being acceptable in many theatres, while the latter are usually limited to non-theatrical bookings and private showing. Television versions of adjusted length are appearing with increasing frequency all over the country.

Executives will easily recognize many points of similarity between these ten basic film applications and corresponding needs or opportunities for their beneficial use in management.

SCREEN COMMUNICATION FORMS

Some of these needs automatically require motion pictures, while others can be adequately met with slidefilms, a junior form of Screen Communication with definite merits of its own. The pictures themselves naturally take different *forms* according to subject matter and required treatment. One salesman had the loose leaf pages of his own prepared *sales presentation* put on a silent slidefilm and talked witn it himself. His theory was that it enabled him to get more concentrated attention, control the course of presentation, and avoid haphazard digressions. When such slidefilm presentations must be made uniformly by many salesmen, the speaking part is recorded for automatic reproduction in step with the sequence of scenes.

The *observation* picture takes the audience on a tour of inspection, of whatever the sponsor wants them to observe, without leaving their seats. This also works in the other direction by bringing to headquarters visualized conditions in the field, for study and improvement of procedure or conditions.

An *experience* picture photoplays a cast of representative characters in suitable locations, enacting an experience the sponsor wants the audience to mentally share. Similarly, a *performance* picture dramatizes the perfect performance of a beneficial course of action for the audience to emulate it. It can be readily seen that the cross reference of these forms apply respectively to consumer selling and sales training.

TRAIN-OF-THOUGHT

One of the most impressive forms of Screen Communication is the *train-of-thought* picture, in which we see and hear the sight, sound, action and sequence of the originators train of thought, almost exactly as he composed it in his mind. The effect of this is to make the screen a sort of artificial minds' eye that will automatically duplicate in the minds of observers. This is a very valuable feature, when you consider the well known ability of the human mind to resist information. Naturally, one cross reference on this is executive coordination.

The *attitude* picture consists of a combination of treatment to prove the correct attitude on a controversial question, without antagonism, as in labor relations. One plot of this kind was based on a father and son who both worked in the same factory. Father had the right attitude, from long experience and observation. Son had the wrong attitude, due to limited experience and exposure

to bad influences. Father brought son around for the happy ending. This is merely for example, the variety of attitude plots being practically unlimited.

When something must be shown that cannot be photographed, *synthetic* forms of production are employed. The most familiar of these is the animated drawing by which anything that can be seen in the mind can be reproduced on the screen. Thus an automobile engine is split in half while running, so you can see and understand its four cycle operation. Animated drawing is also applied to charts and diagrams for greatly enhanced clarity, and to many other things.

A camera attached to a microscope can photograph disease germs and metal defects, so they can be seen and studied. The optical film printer can put a montage of several scenes on the screen at once, and many other optical illusions for effect or novelty. The slow motion camera reduces speed for time and motion studies. The time lapse camera increases speed so seeds will sprout and flowers grow while you wait. There is so much more of this that Eastman has a half hour film on it.

SCREEN COMMUNICATION CHANNELS

There is a great deal of misinformation and misapprehension about showing business motion pictures and slidefilms in private, semi-private, organizational, educational, social and public *channels*, which are broadly summarized as follows:

Individual: A man and a portable projector, wherever there is the necessary electric current.

Intra-Organization: Showing on the sponsors own and branch premises.

Trade: Circulation to distributors, wholesalers, retailers and their trade group meetings or conventions.

Non-Theatrical: More than 75,000 outlets for optional mass or class circulation to impromptu or established groups, such as professional, social and commercial organizations; civic, educational and religious institutions.

Theatrical: From about 5,000 to 15,000 theatres, depending on the length of subjects ranging from thirty seconds to ten minutes.

Television: Several networks and dozens of individual stations, reaching millions of receiving sets and tens of millions of viewers.

Large national distributors of public relations films in the non-theatrical and educational fields claim a combined audience of well over twelve million people of all ages and both sexes. They continue to assert that they are more likely to have insufficient prints or pictures to supply the demands of borrowers, than insufficient outlets to supply the demands of sponsors.

You may have heard that sponsored films cannot be run in theatres. The truth is that one-third of them run ten minute public relations pictures, and two-thirds of them run advertising "minute movies" of one-half minute to three minutes regularly. It is true that the proportion of available theatres is below average in the east, and above average in the middle west, but it is all mass circulation anyway, and no one has ever failed to get whatever quantity he was willing to pay for.

TELEVISION SCREEN COMMUNICATION

The coast-to-coast television field for similar advertising films, called "spots" or "commercials" in television lingo, passed the fifteen million set mark some time ago, and is increasing rapidly toward an eventual forty million or more. The average "attendance" at each set has been variously estimated at around three and a half people. Many non-theatrical film distributors also include television stations among their outlets for regular public relations and educational films. While this service is mostly for sustaining programs, such pictures also are appearing increasingly in sponsored time.

It is also interesting to note that a "minute movie" may be adapted for use as a television "commercial", and vice versa. Likewise that a public relations picture produced primarily for one type of circulation can be adapted to the others. This tends to help realize additional value from certain types of production possibly with desirable economy.

INDUSTRIAL TELEVISION

Something called Industrial Television is breaking out of its cocoon, here and there, as a new member of the Screen Communication family of aids to business management, government, science and academic education. The sub-title of this sort of thing is Closed Circuit Television, meaning that it is all done with coaxial cables, from city to city, place to place, or point to point on the same premises, as distinguished from the usual open air telecasting.

The equipment used is so relatively simple that it was recently demonstrated at the "Ladies Night" of a business men's club. Just a remarkably small camera, power converter, roll of coaxial cable, master viewer or monitor, and one or more extension viewers or ordinary television receiving sets. Such an outfit was also used at a business show to demonstrate a color television process. One equipment manufacturer even supplies a pointing device so the master of ceremonies can point out individual details.

Two-way voice communication is included when required by circumstances, and two-way looking is also possible. Television cameras can function under water or up in the air.

Headquarters sales meetings are being televised on closed circuits to many distant cities simultaneously. Dangerous manufacturing processes are being observed from a safe distance, and in greater detail than would be possible in person. Production bottle-necks, assembly lines, material handling and other plant functions are being watched from a central point. Groups of personnel at different places are being instructed from a single source.

Various items of merchandise in several parts of a department store, are being exhibited on centrally located television screens, to inspire undecided shoppers. Bank checks and other documents are verified by internal television.

General telecasting for special purposes has already included "help wanted" advertising, and an annual report in motion picture form. Also educational programs of home study for all who want to tune it in. One such project is said to include everything from the science of splitting atoms to the art of keeping peas from rolling off the knife.

Government combat forces and their civilian suppliers have naturally boarded the television band wagon, particularly in cases of inaccessible or dangerous proceedings requiring safely distant observation. Air Force authorities are

said to be considering a plan for making airborne television an additional observation device for military and naval operations.

MANY USES

Multiple instruction and demonstration from one source to several separated groups is reported to be under way or in prospect at a number of schools and colleges, in live action and motion picture form. Surgical operations are being televised to multiple audiences outside the operating room, to reach more observers than could crowd around the patient.

All this and much more dramatic evidence indicates that there are many wide fields in which broadcast and non-broadcast television can be applied to the extension of human sight for benefits to industry, science, education and national security.

SCREEN COMMUNICATION EQUIPMENT

The many makes, models and varieties of equipment and accessories for Screen Communication are broadly summarized and defined as follows:

Motion Pictures: Sound and silent motion picture projectors, from very light portable 16mm models to the largest 16mm and 35mm models for fixed installation in auditoriums and theaters.

Slidefilms: Sound and silent slidefilm projectors, from the smallest silent personal presentation models, to the largest 16 inch disc and 1000 watt auditorium sound models. Manual, automatic and remote control.

Slides: The table top viewer, overhead projector, opaque projector, 2 x 2 and 3¼ x 4 inch stereopticons.

Recorders: Disc, wire, tape and film.

Accessories: Easel charts, models, displays, decorations, fixtures, manuals and guides.

You may hear that projectors are too complicated to understand and too difficult to run. The truth is that children are doing it in thousands of schools, young people are doing it in thousands of business places, clubs, organizations and churches. Almost anyone can learn in one lesson, and many learn from the printed instructions without any additional guidance whatever.

SCREEN COMMUNICATION SYSTEM

As previously stated, film exhibition begins wherever there is a man with a portable projector and the necessary electricity in outlets or batteries. Users usually have both motion picture and slidefilm projectors in main and branch offices, as well as decentralized plants. Salesmen often carry either or both. When in operation, this assortment of film outlets constitutes a sort of intra-organization communication system like the private line telephone, telegraph and teletype networks of large financial and industrial concerns, except that the communications travel in cans and can be multiplied indefinitely.

ADVANTAGES

Such mechanized intelligence has a great advantage over all other forms of communication, however, in that it assures complete and correct understanding at every destination point, under absolute headquarters control. Nothing else comes as near to multiplying and disseminating the guiding power and ability of headquarters executives so far beyond the range of personal contact. Incidentally, it has helped many executives to win better jobs and bigger pay.

Headquarters gets the benefit of all this too, through plainer information and easier to follow instructions in film form that might not be thought necessary for them alone. The preparation and use of films at headquarters also serves the useful purpose of checking the superiority and accuracy of the methods filmed, because there is nothing like the process of film preparation and production to expose hidden faults and opportunities for improvement of conditions and procedures.

BETTER UNDERSTANDING FOR BETTER BUSINESS

In the upper levels of management, there is often more difference of understanding than difference of opinion in most disagreement. In the levels below, there is often more ignorance than insubordination in most disobedience. Screen Communication offers a proven means of improving mutual understanding above, and dispelling ignorance or misunderstanding below. The slow growth of Screen Communication in proportion to its value, in the last half century, will always be something of a mystery but there are plenty of precedents.

For instance, it took the Bell Telephone System over thirty years to sell its first five million telephones in the

Newspaper classified columns are full of ads for engineers, chemists, technicians. Employment agencies are besieged with requests for trained technical men.

Yet many concerns do not realize that the best source of trained help may lie right within their own organizations.

How can you tap this fertile source?

The answer is simple. Release your technical men from routine testing jobs. Give them the promotions they earnestly desire . . . give them responsibility . . . put them where their talents and training are used at full potential.

And then turn over your routine testing to us. We can handle it efficiently . . . and probably at lower real costs. We have specially trained engineers, chemists, biologists, physicists, and technicians . . . and at their disposal is a comprehensive array of scientific equipment.

Let's get together and discuss this matter. You may find your "help wanted" problems well on their way to solution . . . and at savings to you!

UNITED STATES TESTING COMPANY, Inc.

Established 1880
1720 Park Avenue, Hoboken, N. J.
PHILADELPHIA • BOSTON • PROVIDENCE
CHICAGO • NEW YORK • LOS ANGELES
MEMPHIS • DENVER • DALLAS
Member of American Council of Commercial Laboratories

United States, but only seven years to sell the second five million. Now they have about forty million. Let us hope that Screen Communication will do a lot better, now that it is approaching the status of a science, the true understanding of which is maturing so rapidly.

For the convenience of anyone who wants to review his own Screen Communication needs and opportunities, here is a check list that may help to start the ball rolling.

FILM NEEDS AND OPPORTUNITIES

1. *What kind of a picture do you want?*

Talking Movie	Cartoon	Presentation
Silent Movie	Photoplay	News Reel (House Organ)
Talking Slidefilm	Musical	Travelog
Silent Slidefilm	Vaudeville	Tour of Inspection
16mm 35mm	TV Program	Off-Stage Voice
Continuous	Dialog	Color

2. *What is the purpose of your picture?*

Coordinating Executives	Employee Relations
Teaching Workers	Consumer Selling
Instructing Clerks	Demonstrating Goods or Services
Training Salesmen	Consumer Advertising
Stimulating Dealers	General Publicity
Educating Students	Institutional Good Will

3. *To whom will your picture be shown?*

Executive Personnel	Retailers
Manufacturing Force	Inside Salespeople
Clerical Staff	Outside Salespeople
Sales Personnel	Customers
Distributors	Prospects
Wholesalers	Students
Branches	

4. *Where will your picture be shown?*

Offices	Individuals
Stores	Groups
Factories	Meetings
Homes	Conventions
Clubs	Schools and Colleges
Theaters	Churches
Outdoors	Television

5. *What is your field merchandising setup? How many—*

Plants	Distributors
Divisions	Jobbers
Districts	Retailers
Branches	Agents
Salesmen	Canvassers
Agencies	Foreign
Territories	

Pre-Determined Time Standards

By HAROLD ENGSTROM
Manager of Industrial Engineering,
Sylvania Electric Products, Inc.

The author presents a short history of the subject—then tells us what to forget and what to remember concerning pre-determined time standards.

THIS SUBJECT first received its impetus when the Gilbreths first demonstrated to management that there was a mathematical relationship between motion and time and that poor methods could be proved on the basis of time and motions. Although the Gilbreths were not concerned particularly in the timing of operations, they were interested, as we all know, in reducing human fatigue and improving methods by the elimination of worthless motions. It is interesting to note that of all the hundreds of various motions that they observed and studied, they simplified them all to a fundamental 18. This simplification made motion study a readily usable tool for the Industrial Engineer. Attention is called to this fact because the trend today with investigators in the field of pre-determined standards is to further classify the basic motions. Perhaps much of this is necessary, but it does call for more and more judgment. Accent on simplicity will create greater interest and perhaps increase accuracy.

Following the Gilbreths initial work, the first man to really appreciate the importance of time as it concerned methods analysis, was A. B. Segar. His technique of minute motion breakdowns of body members and the assignment of physiological values to the muscle structures that caused the movements was indeed a tremendous advance to methods analysis and of great importance to Industrial Engineering. This approach is likewise of great importance to the manufacturer of small parts where the basic work is the result of hand motions, such as: radio manufacture, appliance assemblies, electrical work and the like. For that reason, in the early 1920's General Electric became very interested in this subject. One of the reasons that whetted their interest was the fact that estimates for new products had to be carefully made for their large volume of production. Their original time standard plan was the first classification of time values for specific hand and body motions for specific types of work.

FIRST PUBLISHED SYSTEM

From this work, in 1934 and 1935, perhaps the first published system of pre-determined values assigned to motion breakdown was published for the field to further explore and improve.

Around the same period, another group of research engineers from Philco and R. C. A.—Messrs. Quick, O'Brien, and Shea derived another classification system called work factor for the measurement of methods. Because of its great value, this system has been greatly extended in the field and has had widespread acceptance.

Three or four years ago, the Methods Engineering Council system known as M. T. M. was published. It too is gaining wide-spread recognition and acceptance.

That this approach to our standards and methods problems is valuable and popular cannot be denied. Many organizations have their own private systems, the workings of which, they are not too willing to divulge.

THE VALUES ARE MANY

The values of Pre-determined time systems to the analyst are many. As we know, it provides a quick way for arriving at an estimate. If the analyst is properly trained to use the system, we can be assured of correct comparative values for different methods set-ups. When the analyst studies machinery operations, pre-determined times for motions give him more accurate break off points for the job elements. It proves to management the vital importance of methods control as well as methods improvement; and perhaps the most important usage it has is that it gives us a bench mark for effort rating.

In the usage of these various systems, let us not forget one important thing, and that is that time measurement in itself is of prime consequence to management. It provides the basis of the measurement of efficiency and consequently its profits. It establishes the standards for industrial productivity and hence is an integral part of our industrial relations program. So the success of a managerial enterprise depends a great deal on the correct use of these various systems. The careless use by time study specialists in the development of standards led to very serious consequences to the field of industrial engineering at the conclusion of World War I, when many organizations eliminated time study work because of their unhappy experiences with it. It was only through the media of planning departments that industrial engineers gradually gained prestige in industry and that was due primarily to the work done in improving time study technique and the improvement of the subject of effort rating. So then we must use this new measurement tool with a great deal of thoughtful consideration. We don't want to get the pre-determined answer with unreliable pre-determined standards.

In a small community down in Westchester county, there was a great deal of anxiety and fear when it was suddenly discovered that some inhabitant of the

community was using the town as a rifle range. All over the community, on fences, on telephone poles and even on the sides of houses, was a target with a bull's-eye right through the center of it. The local police could not cope with it and the state police who finally succeeded in trapping the culprit, who, incidentally, happened to be the town nitwit, inquired how it happened that he had become such a remarkable crack shot. He denied that he was a marksman and when he was asked why it was that he could shoot so many bull's-eyes, he told them that it was very simple,—he shot first and drew the circles later. This technique is very similar to that of the analyst who builds a methods pattern through pre-determined values and confidently expects the operator to adhere strictly to it.

"BENT" THE SYSTEM

A few months ago, I talked with some engineers at the Naval Yard down in Philadelphia who told me they had some difficulty in using their pre-determined time system. When they were asked what they did when they did not have a value for a certain situation, they simply said that they "bent" the system. In other words, they picked the value out of the air to fit the general conditions. I went over the analysis of a certain assembly with an engineer and I asked him how he arrived at a particular value for a screw assembly. He said that he already possessed the value for a certain type of large screw assembly. It seemed that the screw he was considering was very small and since it was approximately one-third the size of the screw he had the standard for, he simply divided by three. If we have much of this type of thinking, we will be guilty of perpetrating a cruel hoax on management and will eventually put industrial engineering in the status that it had in World War I.

This obviously we do not want. In our own organization, we have not standardized throughout on any particular system. The radio division has for several years used work factor, and the other divisions use, for check purposes, any one of the four established systems. Curiously enough, they come out with approximately the same answer or with an accuracy comparable to time study when properly used. In all cases, we insist on check or verification time studies. The type of system in itself is not important but the basic values are, and it is extremely interesting to learn that a few weeks ago five industrial management consultants had a meeting in Canada where they decided to cooperate in furthering the interest in providing sound basic values. This is indeed a great forward step. We should do all we can to cooperate in such a splendid program.

The text of this talk was delivered at a successful one-week Management Conference on the campus of the University of Connecticut August 26 to September 1. The conference was devoted to time study and methods and featured lectures by authorities in the field. The Connecticut Chapters of S.A.M. (Bridgeport, Hartford, New Haven and Stamford) combined and the University of Connecticut held the Conference. This talk by Harold Engstrom, Manager of Industrial Engineering of Sylvania Electric Products, Inc. was one of the highlights of the Conference.

Mr. Engstrom was National Director of the Baltimore Chapter of S.A.M., 1944-45; President of the Baltimore Chapter, 1943-44; Chairman of the 1948 Time Study and Methods Conference, Vice President in Charge of Manufacturing of the New York Chapter of S.A.M., 1950-51; and winner of the Gilbreth Medal. Among his National S.A.M. Committee memberships are those on the Awards Committee and the Emerson Trophy Committees.

TRAINING IMPORTANT

The training in this type of work measurement is particularly important because in a well taken time study the judgment factor is only used once and that is in the making of the effort rating figure, whereas, in the use of synthetic time systems the carefully considered judgment of the observer is required dozens of times thereby increasing the probability of serious error. Regardless of the system used, it is well to prepare and study the necessity of developing reliable standard data sheets for specific operations. This reduces the hazards of carelessness and faulty judgment.

Let us not forget that one of our primary functions is to establish time standards. In this field, we set ourselves up as experts. Our interest cannot be diverted from that important fact. Interest, novelty and convenience cannot take the place of accuracy. We cannot disregard our study and interest in the improvement of time study technique per se. Much work has yet to be done in measurement before we can consider the short cuts. Short cuts are important. That too is part of our business. An accomplished and trained young lady once estimated for us a hundred standards a day by use of pre-determined standards set up on standard data sheets. These were occasionally checked by time studies to assure ourselves that the standard data sheet was up-to-date in regards to work elements, that methods changes did not exist.

STILL PROGRESS TO BE MADE

Verification time studies should be insisted upon as an assurance that we are not digressing too far from normal. This might seem contradictory but we do still have this problem of operator aptitude, managerial climate and war conditions for which we have yet to devise a measuring stick. Despite the great advances made in synthetic values, we cannot at this point consider them as substitutes for time study measurement. They are rather an aide, supplement and guide for better and improved standards determination.

IMPORTANT POINTS

Repeating then, let us remember the responsibility that we have to management in supplying it with proper measurement. The importance of cooperative activity in working up basic values, the correct utilization of the systems which we propound, the importance of training the analyst in the use of the system. Let us not forget that we still have much work to do in the subject of time study and effort rating and that we should not dispense with this basic tool of the industrial engineer at the expense of trying the new for convenience. Our progress in this field has been most interesting and in a forward direction. Let us not overlook the fundamentals in our enthusiasm for it.

Mechanical Methods For Determining Plant Layout

By SPENCER A. WEART
Barrington Associates, Inc.

An ideal layout can be constructed but it is sad to say that the ideal layout usually must be modified to meet practical matters. The fact that such compromises are necessary is no reason for not finding out what is necessary to make the layout as ideal as possible.

THE STANDARD text books on the subject of plant layout, and the numerous articles that have appeared on this subject, invariably seem to start with a study of the routing of the parts to be manufactured. The customary instruction is to "reduce the routing to paper" —draw a flow chart, either of the symbolical type, or in the form of an actual plan of the machinery, with the flow lines traced by colored strings. I am sure that all of us have, at one time or another, stuck pins into a layout drawing, and wound colored strings from machine to machine. And I am equally sure that we soon became hopelessly confused in most cases.

I have no fault to find with this procedure, in general, if only a few parts are being manufactured, but, while we all tend to think in terms of the Detroit-type of automobile parts plant, or a cigarette factory, making one simple assembly, or even one part, on hundreds of identical machines, the fact is that such straight mass-production plants are a rarity. Their layout presents no real problem at all as to routing, for obviously the flow of material can only be in one direction, and there is seldom any reason for back-tracking or criss-crossing of lines of travel. Mass-production, straight-line plants are simple to lay out, rarely encountered in their pure form, and involve problems in conveyorization and space saving rather than in actual layout, itself.

SIMON-PURE IS A RARITY

At the opposite extreme from the mass-production plant is the simon-pure job machine shop, the shop that never makes the same item twice. The layout here is equally simple, for it is governed by no routing principle whatsoever, because there is no possibility of foretelling the future routing of a part as yet unknown. Such job shops, as you are of course aware, customarily disregard routing, and arrange machines by function, so as to secure simplicity of supervision, and for other reasons unassociated with material handling problems. A simon-pure job machine shop also is rarity in practice, for only a few of them ever become large enough to have a real layout problem.

But between the job machine shop, simon-pure, and the mass-production plant, simon-pure, lies the enormous number of manufacturing plants that are not strictly job shop, and yet which have job shop features. I am not writing about the layout of process industries, such as meat packing plants, for each process industry is a specialty in itself, and its layout problems bear little, if any, relation to those of the usual type of manufacturing plant.

I am discussing the thousands of plants in the fabricating industries, which in whole or in part produce a reasonably standardized product, but in quantities, styles, and sizes varying in lot size from one piece only to perhaps thousands — some of the lots being run only once or twice a year, and some being run day in and day out, yet all of which must be manufactured on the same machines by the same workers.

WHICH ARE THE KEY PARTS?

It has always seemed to me that the determination of correct layout for plants of this type has been largely ignored in scientific management circles. The customary instruction is to "trace the routings of the key parts." But which are the key parts? "The relatively few parts which are made in large quantities continuously," probably would be the answer. But in most plants which I have encountered, the sum of all key parts, put together, never equals in importance, from a material handling standpoint, the sum of the thousands of other parts never thought of individually as being of much consequence as to material movement. Yet it is the tote boxes and skids of parts like these which produce the congestion, and which get trucked endlessly from one end of the plant to the other.

It is exactly these myriads of small-quantity, infrequently run parts, that upset the layout. No really constructive plant layout can be made which ignores these parts.

DEGREE OF ORDERLINESS

The problem is always how to bring some degree of orderliness out of the chaotic mass of thousands of routing sheets, all of which at least seem to differ in some degree from each other. It is the physical task of reducing the hundreds of thousands of possible combinations of flow that usually stumps the management engineer, and makes him fall back on his usual practice of "tracing a few key parts."

Before getting too scientific, it is usually advisable to see what rule of thumb procedures accomplish, for in this way the more expensive and time-consuming theoretically correct procedure often can be avoided, and a sufficiently good result attained, in short time.

ANALYSIS OF ROUTINGS

The obvious first step is, of course, an analysis of the routings, but the practical approach to this is not to sit down with a mass of route sheets — assuming they are available. The data on the route sheets has already been predigested for the engineer by the shop foremen, and an hour's talk with a foreman will give a rough indication of the flow of the bulk of the parts into, out of, and within, that particular department; it will point out any outstanding bulky or difficult to handle materials; also, any important exceptions to the more normal machine arrangements. A few days of conversation with all the foremen, route sheet writers, superintendent, and others concerned, will soon result in development of a general, but hazily defined flow pattern. The master flow plan will be nebulous and not quite grasped, but will be there, and serve as a good background. This general pattern will only concern the more important machines and departments as a whole, leaving thousands of blank spaces which cannot be filled in except by guesswork if the study is stopped at this point.

The next step is to make an analysis of the parts. Someone from the Production Planning Department or the Shop, who is familiar with all of the parts by their number, name and general appearance, should be persuaded to sit down with the route sheets and code each as to its material handling characteristics in transit — that is, the ease with which it can be moved from one place to another. A good classification would be into the three groups of —

(1) Easy to move, such as a small screw machine part, in which a tote box might contain thousands of individual pieces.

(2) Average. This would be a part representing the average piece manufactured in the plant.

(3) Hard to move, such as a large forging or casting handled only with difficulty.

Intermediate classifications can be used between "1" and "2", and between "2" and "3" but if used, care must be taken to maintain the geometric series.

After all of the parts are classified by marking the route sheets with the appropriate number, then the work becomes purely clerical. On the same route sheet, there is entered the annual production requirements, data which must always be at hand in the Production Planning Department. It will be noted, then, that when this has been done we have a route sheet coded as to ease of handling the part, and with the annual volume. The route sheets must then be checked to make sure that the number of transfers between machines or work spaces can be properly counted, not forgetting the transfer from Raw Material Stores into process and out of process upon completion. Multiplication of the "ease of handling" number by the annual volume by the number of transfers between operations then gives a reasonably good key index figure as to the relative importance of this item. Just what this number represents I really don't know, except that it is probably somehow, even if remotely related to energy, since it represents more or less the number of pounds moving a number of feet in the given time interval of a year.

MANY ROADS ARE OPEN

At this point, one of several courses may be taken, dependent upon the mechanical equipment available. A tabulating card can be punched for each part for the three entries of ease of handling number, number of transfers, and annual volume of production, then the cards run through an automatic multiplier, and sorted in order of magnitude of the resulting product thus computed. Another course would be to multiply out, by comptometer, the three numbers to obtain a product, record it on the sheet, and then punch a Keysort card for the result, and in turn sort these by order of magnitude. The third method would be merely to write the part numbers and products on a card, and sort the cards. The first method using tabulating machines, is of course preferable, but if not available, then recourse can be had to purely clerical efforts without too much loss of time.

The end result of all this, which in practice takes less time than might be thought, and further occupies only relatively low priced clerical help, is a list showing the parts in order of importance. And by importance, this time, is meant importance from a material handling standpoint. The parts ordinarily considered important sometimes occur far down the list when classified as above, and apparently minor parts rise to a pre-eminent position because of their weight, awkwardness of handling, and number of transfers between operations required.

The next step is to classify all machines being considered in the layout into major groupings. That is, group all machines having nearly identical functions together, under the same generic name. For example, it will suffice, merely to group machines as "Light vertical drill presses," "Heavy radial drills," etc., without attempting to pin each machine down to an exact description. It is surprising to find how few machines are exactly alike. Even if purchased at the same time from the same machine tool builder as the same model number, usually the shop has managed to make enough changes during the years to keep them from being 100 percent interchangeable on all jobs. However, in all such instances, the class of work which the machines can do is the same.

"MAJOR" PARTS

It is now possible to take the major parts — and note that they are the ones determined to be "major" in a material handling sense — and by studying over them get some approximate idea of what the layout should be as to major machine groupings. That is, the attempt is only to arrange machine groups, as blocks, in relation one to the other. It may be found, for example, that most of the milling operations are invariably followed by grinding — hence, it is self-evident that the grinding machines, or at least a lot of them, are going to be located adjacent to certain types of milling machines. The pattern which evolves in this manner may or may not correspond with the preliminary one evoked by talking with shop people. Usually, the pattern will have a fair resemblance to the first one, but with some important variations.

Sometimes the study can be stopped at this point, and sufficient information be obtained by study of individual rout-

The text of this talk was delivered before the Richmond, Virginia Chapter of S.A.M. on January 22, 1952.

ings to obviate any further work. This will be the case when the number of parts in question are relatively few in number—a few hundred, for example, but it is impossible to get a true material flow pattern when many thousands of parts are involved, without recourse to the step next to be described. Unfortunately, this next step, because of the mere clerical magnitude of the task, from a practical point of view is an impossible accomplishment without the use of punch-card tabulating machines. No doubt electronic computers would do the same job, but so far I have only encountered one of these in a manufacturing plant, and it always seemed to be either busy on engineering data, or indisposed — so we will have to rely for a while yet on the now antiquated tabulating machine.

The tabulating machine method, it will be recalled, permits using lower-priced help than that of the very high-priced layout man. A simple form of tabulating card is required—in fact a blank card can be used, although if time is available it may be convenient to have some printed up with the proper headings. A card is punched for each part manufactured showing—

(1) A key index obtained by multiplying annual production by the ease of handling number; under the next procedure to be described we omit the number of transfers, for a reason which will become obvious; and

(2) A sequence of operations, as will be explained next.

Every machine or group of identical machines in the plant is assigned a standard non-repeated number—rarely will these run over four digits, and three digits customarily are all that are required. Where there is a battery of machines, any one of which is identical with the others, one number is given to the entire group. In many plants it is impossible to use cost department, or brass tag numbers of the machines themselves. In general, it is preferable to have too many machine numbers rather than too few, and there is no harm in giving every machine a non-repeated number, even where some machines are identical. Another standard number is assigned to each storeroom or work bench, or other non-machine place indicated on the route sheet. If the parts, when finished, go to differing storerooms, assembly benches, or other places, then numbers must be assigned to all such stores, shipping, etc. spaces.

In punching the cards, the first set of columns would be reserved for the first line on the route sheet, and in them would be punched the number representing the place from which the material is obtained; for example, bar stock stores. The next set of columns is reserved for the next operation listed on the route sheet, and so on, until all operations have been covered.

After the production and the operational sequence have been punched into a separate card for each part, then the cards are sorted by the first set of columns (which represent the first operation) thus bringing all identical machine numbers in this group of columns together. All cards which are identical in this first group of columns are then bunched together, separated from the rest, and sorted so as to place them in order by their second operations, as shown in the second group of columns. The separate sorted bunches are next tabulated, that is added, so as to give the total in their production index columns. After tabulating, the entire group of all cards is resorted, this time into order by the second set of columns, that is, by the second operation columns, and the process repeated.

A new card is now punched for each line of the tabulating reports. This card shows the total production of parts going from one machine to any other machine. There will be anywhere from one to a number of these cards, depending upon where the operation occurred in the route sheet sequence. By sorting each of the second group of punched cards into order by the machine numbers and tabulating as to production index, we then get a final report showing the volume of movement from each machine in the plant to every other machine in the plant. The production figures are then converted into percentages for each machine. I think it will be obvious by now why this job cannot well be attempted clerically, although it is theoretically possible.

Now, what do we have? Simply this—an exact, scientifically determined picture of the movement of all parts passing over each machine or work space to every other machine or work space, and a true knowledge, impossible to attain in any other way, of the machines which have the greatest necessity for being placed together.

EXAMPLE OF TABULATING PROCEDURE

In a certain plant the weighted production of one part was 16,350 (8,175 pieces per year X 2 as ease of handling factor). The part utilized the following machines or work spaces—

101—Raw material stores
102—W x S Turret lathes
103—B x S External grinders
105—Heat treating
232—Subassembly stores

A card punched for this part then reads as follows—

Sequence of Operations

Prod.	1	2	3	4	5	6
16,350	101	102	103	105	103	232

When the cards were first sorted all cards having "101" in column "1" were brought together and then bunched. Resorting by column "2" simply placed these cards in order, as 101, 102; 101 103; 101 104, etc. Upon tabulating the first time, the cards gave a report like the following for each bunch.

Column "1"	*Column "2"*	*Weighted Production*
101	102	16,350
101	103	780
101	104	3,640
102	103	1,700
103	104	9,110

After repeating the process for column "2" a similar report was obtained, and similarly for all other columns.

The blank card punched for each line in the foregoing tabulating report had the following appearance for the first line in the foregoing report:

101102 16350

All these last cards were sorted into order by the first set of figures, whereupon by tabulating them the following report was obtained.

101102	473,120
101103	200,190
101104	326,690

or interpreting—

From Machine Standard No.	*To Machine Standard No.*	*Weighted Annual Production*	*Per Cent of Weighted Annual Production*
101	102	473,120	47.3
	103	200,190	20.0
	104	326,690	32.7
		1,000,000	100.0

It's Fun To Run A Chapter Conference

By PETER C. DINOS and PAUL J. MacCUTCHEON
Industrial Engineer Chief Industrial Engineer
Nestlé's Chocolate Company, Inc.,
Fulton, N. Y.

These important points are written by two men who have worked with and witnessed success in clinics and conferences.

THERE ARE MANY reasons you could think of to get your Chapter to sponsor a Clinic or Conference. Here are a few:

1. As a genuine service to the members and area your Chapter serves.
2. To secure new members.
3. To earn money for the Chapter.
4. To spend your Chapter's money.

Organizing and running a Conference is excellent experience. It can be fun, too. We all enjoy success. And you can be successful at this if you will organize, plan, and follow through. The following notes, selected from our experience. may be helpful.

THE THEME

Once you have decided on a reason start lining up your speaker or speakers. The bigger the name the bigger the audience. A speaker whose name is immediately associated with time study, methods, synthetic time values, or labor relations, could be a magnet.

Make initial contact with the speaker at least five months before Conference time. This will allow time for contacting other potential speakers if your initial main-liner is not available. In any event, allow a minimum of three months for making all arrangements supplementary to getting speakers. If you cannot work this far ahead you are risking a failure!

PUBLICITY

Success or failure depends upon the interest you can create. Interest is created by:

Direct Mail
Publications
Personal Contacts

DIRECT MAIL

Most of the people will be attracted to the Conference by means of direct mail. For this reason your mailing pieces must contain all possible information. A tear-off coupon for registering in advance is usually a part of the mailing piece. A good sized print shop—not a small job shop—is invaluable help in laying out your mailing pieces. A reputable printer will charge no more than the going price and also will assure you of a professional looking job. Most small job shops use the same worn type over and over and have a narrow choice of type styles. This can result in a fuzzy looking job with unrelated type styles. Insist on preliminary proofs and don't o.k. the press run until you are completely satisfied.

Since the mailing will be bulk mailing of identical pieces, you will save many dollars by obtaining a postal permit for mailing these identical pieces under Postal Laws Section 34.66. This Section permits you to mail identical pieces in bulk volume of 200 or more at a cost of 1¢ per piece. The mailing can be done by affixing pre-canceled 1¢ stamps, postage meter imprint or a printed postage insignia. Although the postal permit will cost ten dollars, several times this amount may be saved through its use. Your local postmaster will be glad to supply you with additional details.

PUBLICATIONS

Two avenues of free publicity are yours for the asking: trade journals and local newspapers. The announcement of the Conference should be double spaced on 8½″ x 11″ paper and have ample margins. Have it written by someone able to do a skillful and professional job of writing a news release. Editors chop a news item from the bottom up, i.e., as space permits they print what they can of your announcement, paragraph by paragraph. They may have to leave out the last paragraph, the next to the last paragraph and so on, depending on space available. Therefore, be sure to get the what, who, and where, of your announcement completed by the first or second paragraphs.

A list of trade magazines and newspapers is available in Ayer's Newspaper Directory or the Editor and Publishers Year Book. Either of these is available at a fair sized library.

PERSONAL CONTACTS

The personal touch succeeds where nothing else does. A phone call to a key man in a plant can possibly assure you of several additional people to attend the Conference. Sometimes a busy executive's secretary will not bother him with announcements if he appears to be in a non-receptive mood on that day. A phone call may be the first he has heard of the Conference. A persuasive talker on the phone may mean the difference between success and failure of your venture.

FINANCES

HAVE A BUDGET

Rough out your anticipated major fixed and variable expenses. Decide what your Conference fee will be. Warning: don't set it too low! You should have a break-even point well below the maximum attendance you can handle. Set a date—perhaps two weeks before the Conference date—at which you will review the total of paid registrations. Something might go sour—and there are situations

where it would be wiser to cancel a Conference than risk heavy losses. Of course —if you have done everything else properly the chances are you won't even have to consider such an unhappy possibility.

SPEAKERS' FEES

Payment to the speakers usually follows one of these patterns:

a. Fixed fee — no extra charges.
b. Travel and accommodation expenses only.
c. Travel and accommodation expenses plus a fixed fee per guest. (The speaker usually distributes manuals, booklets, or work material to each guest at no additional charge.)

PRINTING AND MAILING COSTS

An 8½" x 11" announcement on 60 lb. stock, printed in one color on both sides will cost about $60.00 for the first 1,000 copies and $20.00 for each additional 1,000. Approximately $7.00 per 1,000 names. Using postal permit — $10.00 per thousand. Miscellaneous — name cards, luncheon tickets, etc. — $10.00.

FOOD AND MEETING PLACE ACCOMMODATIONS

A well-known hotel is the best place to conduct your Conference. Large hotels are well staffed and capable of quickly setting up the needed chairs, tables, platforms, reception accommodations, etc. The average hotel will charge a fixed amount per luncheon plate. The use of the meeting room, furniture, and equipment will be free. However, a guarantee of a minimum number of luncheons is usually requested by the hotel.

RECEPTION

People will have to be greeted. This means provisions for registration at the entrance to the meeting room. If a crowd of 200 is expected you will need more than one registration desk. The hotel will provide whatever tables and chairs are needed at the entrance to the meeting room. The following arrangement has worked well where most registrations were paid in advance. Set up 5 desks, each manned by one person:

1. *Paid registrations*
   A to L
2. *Paid registrations*
   M to Z

CAREFUL PLANNING AVOIDS PUZZLEMENT

ENTRANCE ROOM AT A CONFERENCE

REGISTRATION TABLES

SEATING WORKERS AT HEAD TABLE GIVES RECOGNITION

THE HOTEL WILL ARRANGE CHAIRS FOR YOU

At each of these desks prepared name cards should be ready for distribution together with the luncheon tickets and supplies tickets (if registrants are to use manuals and work papers for the conference).

3. *Unpaid registrations*
This desk will take care of those people who have not submitted advance registrations or who have delayed payment. A typewriter is needed at this desk to fill out the name cards for these late comers.

4. *Supplies*
To avoid confusion a separate table is desirable from which to distribute any supplies the registrants need for the conference. It is advisable to locate this table a short distance away from the registrants' desk to prevent congestion.

5. *Information*
No matter how well you plan your Conference there will always be on the spot decisions to make. Some registrants will want to stay for only half the Conference and give their rights for the other half to another person. Others will have sent in money which has not yet been received. Depending on the nature of the Conference, the Government may send some representatives. Each of these representatives will have the usual myriad of forms in triplicate that have to be signed before the Government will pay the Conference fee. These and other on the spot decisions will have to be made by the man at the Information desk. It is best to have a man at this desk who has been in on the Conference arrangements right from the beginning.

THE MEETING

Courtesy to speakers should be self-evident. Yet many a lament we've heard from prominent men about S.A.M. Chapters who've asked them to speak — then failed to meet them, failed to get them a hotel room, failed to make them feel at home. And failed to make a friend, we might add. If you will take the viewpoint that, regardless of financial arrangements, your speaker is doing you a real favor — you can hardly go wrong.

The speaker will need lots of background help to assure a successful Conference. Be sure to ask him to submit a list of equipment he will need at least 2 months before meeting time. This will give you adequate time to line up the equipment and one or two people as assistants. Here's a partial checklist for equipment:

Lectern
Platform
Blackboard
Sound Projector
Silent Projector
Slide Projector
(make and size)
Table
Power Cable
Means to darken room
Switch location
Chair arrangement

LEAVE NOTHING TO CHANCE

Nothing should be left to chance. The hotel should know your plans and your needs — in detail. Draw up a timetable and stick to it. Often an evening affair, very profitable to the hotel, will follow your daytime Conference. There is no quicker way to lose the goodwill of a hotel than to hold up the often extensive preparations they must make for the next event.

The luncheons provide an opportunity to publicly thank all the "behind the scenes" people who had a part in bringing the Conference together. It's customary to seat these people at the speaker's table. And don't forget these luncheons provide an excellent excuse for a short talk to non-members on the advantages of their joining your S.A.M. Chapter.

SUMMARY

Keystone of a successful Conference is *careful planning*. This means:

Organizing a logical division of duties.
Defining these duties in *writing*.
Making sure the *doers* understand their duties.
Painstaking follow-up of major plans and minute details alike.

Here is a timetable to guide you in your Conference Planning. All dates are before "C" day:

5 Months	— Birth of the idea.
	— Contact potential speakers.
3 Months	— Speaker selected.
	— Behind the scenes people appointed for: publicity, reception, and speaker's helpers.
	— Hotel arrangements.
2 Months	— Speaker's equipment
	— Releases to trade magazines.
	— Get mailing announcements printed.
	— Develop a mailing list.
3 Weeks	— Releases to local newspapers.
	— Mail announcements.
1 Week	— Second releases to local newspapers.
	— Phone calls to key people who have not submitted reservations.
1 Day	— Dry run at hotel with necessary equipment.
"C" Day	— Have fun.

MANAGEMENT BOOKS *Recently Received*

Please order books directly from publishers.

How to Supervise People, Third Edition by ALFRED M. COOPER, published by McGraw-Hill Book Co., New York, N. Y. 254 pages, $3.75.

Factory Planning and Plant Layout, by WILLIAM G. IRESON, published by Prentice-Hall, Inc., New York, N. Y. 385 pages, $7.35.

Psychology in Industry, by J. STANLEY GRAY, published by McGraw-Hill Book Co., New York, N. Y. 401 pages, $5.00.

Union Solidarity, by ARNOLD M. ROSE, published by University of Minnesota Press, Minneapolis, Minn. 209 pages, $3.00.

Selling to Industry, by BERNARD LESTER, published by The Industrial Press, New York, N. Y. 255 pages, $3.50.

Collective Bargaining, by C. WILSON RANDLE, edited by EDGAR S. FURNISS, published by Houghton Mifflin Co., Boston, Mass. 740 pages, $8.00.

SOCIETY NEWS

BOSTON HAS ALL-DAY CONFERENCE

Incentive plans can boost production and bring workers and management closer together, Edward M. Dowd, vice president of the Lapoint Machine Tool Company told the BOSTON CHAPTER. Nearly 200 members and guests heard the roundtable discussion by Mr. Dowd; Willard Gardiner, industrial engineer at Sears, Roebuck, and K. C. Bevan, factory manager, Tyler Rubber Company. Paul Hoover, vice president and director, Standard Duplicating Machines Corporation was moderator.

Dowd, whose company was a pioneer in the use and development of the Scanlon Plan for incentives, described the steady increase in production and smoother relationship with the union since the plan has been in effect.

Gardiner pointed out that any incentive plan must be carefully devised so that it will continue to guarantee set standards in case of legitimate changes in plans and procedures. Bevan declared that any company must have incentive for its workers for efficient operation, even if it has no recognized incentive plan.

THIRD INDUSTRIAL ENGINEERING CONFERENCE IN MONTREAL

The Montreal Chapter sponsored Canada's Third Annual Industrial Engineering Conference with the theme of "Human Aspects of Industrial Engineering." The conference leaders were Phil Carroll, Registered Professional Engineer of Maplewood, N. J. who spoke on "Making The Most of Incentives," Ralph Presgrave, Consulting Management Engineer, Toronto, Ont., who discussed "Standards and The Worker," George R. Northrup, Monsanto Chemical, Monsanto, Ill., who talked on "Industrial Engineering—Supervisor's Opinion," and William Y. Hutchinson, General Supervisor of Wage Administration, International Harvester Co., Chicago, Ill., whose topic was "The Industrial Engineers Place in Industrial Relations." W. Royle was conference chairman.

Previous conferences have stressed the application of techniques but the emphasis this year was on the reaction of individuals concerned with the techniques.

CHAPTER STANDINGS AS OF MARCH 1, 1952

MEMBERSHIP		CHAPTER PERFORMANCE AWARD	
New York	439	Washington	2440
Chicago	313	Greensboro	2165
Philadelphia	307	Pittsburgh	1855
N. New Jersey	275	Hudson Valley	1852
Cincinnati	264	Allentown	1827
Cleveland	257	Milwaukee	1597
Washington	230	N. New Jersey	1591
Boston	205	New Brunswick	1368
Pittsburgh	194	Boston	1305
Detroit	168	Trenton	1245
Los Angeles	133	Chicago	1163
Milwaukee	129	Philadelphia	1131
San Francisco	110	Baltimore	1096
New Brunswick	107	Indianapolis	1062
Greensboro	106	Wilmington	1049
Indianapolis	104	Detroit	1038
Lancaster	99	New York	1033
Dallas	91	Wilkes-Barre	901
New Haven	87	Atlanta	877
Asheville	85	Central Pa.	694
Hudson Valley	84	Cleveland	684
Dayton	83	Worcester	654
Baltimore	81	St. Louis	600
St. Louis	66	Lancaster	580
Montreal	62	Montreal	551
Bridgeport	60	Cincinnati	531
Worcester	59	San Francisco	505
Atlanta	58	Los Angeles	472
Providence	57	Columbus	439
Trenton	54	Dallas	420
Allentown	53	Dayton	416
New Orleans	52	Birmingham	336
Wilmington	52	Richmond	305
Central Pa.	52	Manchester	303
Columbus	52	Bridgeport	301
Hartford	52	Western Mass.	284
Louisville	50	Portland	277
Knoxville	49	Knoxville	264
Birmingham	47	Louisville	235
Wilkes-Barre	45	New Orleans	230
Manchester	39	Nashville	216
Baton Rouge	38	New Haven	180
Portland	37	Central New York	171
Central N. Y.	34	Asheville	156
Twin City	33	Stamford	132
Richmond	31	Hartford	94
Western Mass.	30	Providence	64
Kansas City	23	Kansas City	49
Nashville	16	Twin City	30
Stamford	12	Baton Rouge	12

FORMER EDITOR OF ADVANCED MANAGEMENT

Dr. Ordway Tead, chairman of the Board of Higher Education, has been named a director of the American Society for Friendship with Switzerland. The Society is dedicated to maintaining and developing the mutual friendship of the people of the United States and of the Swiss Confederation. Dr. Tead has been a lecturer with Columbia University, with the consulting firm of Valentine, Tead & Gregg in Boston, with the Bureau of Industrial Research, The McGraw-Hill Book Company and is now associated with Harper & Brothers of New York City. Dr. Tead was on the editorial staff of ADVANCED MANAGEMENT from 1936 to 1950.

METHODS-TIME-MEASUREMENT CLINIC IN LOUISVILLE, KY.

Because of the numerous articles that have been published concerning MTM and the keen interest in every kind of industry about this subject, the Louisville Chapter decided to give the opportunity of knowing more about the techniques to the industries of greater Louisville. The Serge A. Birn Company, Consulting Management Engineers of Louisville conducted the clinic as they have done in many cities in the Midwest.

This important industrial engineering technique was explained by Clifton Ellis, Chief Engineer for Serge A. Birn Co.; W. W. Taylor, Chief Industrial Engineer of the Cincinnati Milling Machine Co., Cincinnati, Ohio; and Donald G. Stohlman, Chief Engineer of Serge A. Birn Co.

In addition to the lectures and demonstrations, small groups were organized to apply MTM to actual industrial operations. The group leaders scheduled were MTM practitioners, who represented a cross-section of industry. They were Walter Backus, Chief Industrial Engineer of Jos. E. Seagram & Sons, Inc. of Louisville; Sterling Durst, Production Manager of Gamble Bros., Louisville; John V. Guenthner, Time Study Engineer of American Saw & Tool Co. of Louisville, and Thomas E. Arnold of The Kroger Co. of Cincinnati.

The General Conference Chairman was John F. Babbitt, President of J. V. Pilcher Mfg. Co. of Louisville.

MARCH CHAPTER ACTIVITIES

The San Francisco, Calif. Chapter was enlightened by Raymond Reeves, vice president and research director of the San Francisco Bay Area Council, Inc., on the subject of "The Challenge of Management In The Elmo Roper Survey of West Coast Industry." The Roper Survey contains many reflections on the reputation of the Bay Area in comparison with other major west coast centers, as revealed by interviews with top industrial executives across the country, in regard to such things as plant efficiency, production and selling costs, labor relations, management practices, etc. Mr. Reeves, who has discussed the report with Mr. Roper personally has also made a comprehensive analysis of its contents.

The Knoxville, Tenn. Chapter heard Ernest H. Reed, manager of education and personnel of the International Harvester Company of Chicago speak on the subject of "Management Training." Mr. Reed is widely known for his outstanding activities in this field and was particularly qualified to speak on this important management subject.

The New York City Chapter had a panel discussion regarding wage and salary stabilization. The chairman for the meeting was James J. Bambrick, Jr., labor relations specialist with the National Industrial Conference Board. The panel of speakers consisted of Frederick H. Bullen, vice chairman of the Wage Stabilization Board who is on leave from the position of Executive Secretary to the New York Board of Mediation, Milton M. Olander who is on leave from his position as director of industrial relations of Owens-Illinois Glass Co. and now industrial member of the Wage Stabilization Board and representative of industry on the U. S. delegation to the International Labor Organization Conferences, and Elmer Walker, vice president of the International Association of Machinists, A.F.L. and member of the Stabilization Board. Arthur J. White, chairman of Region 2 (N. Y. area) of the Wage Stabilization Board and E. H. van Delden, Director of the New York Office of the Salary Stabilization Board and professor of Industrial Relations, Graduate School of Business Administration, New York University were also members of the panel. The first half of the meeting was devoted to prepared questions and the latter half, questions from the floor.

The Washington D. C. Chapter heard Oscar Chapman, Secretary of the Interior, whose subject concerned Natural Resources Management and Its Implications. A question and answer period followed the address by Mr. Chapman. Effective utilization of the Nation's natural resources has become a subject of critical concern to agencies of the government responsible for preparing the country to meet any eventuality, including total war. The Department of the Interior with its preponderant responsibility in the field of natural resources has been a subject of continuing discussion on the use of natural resources in the defense effort. The creation of the defense administrations for electric power, solid fuels, fisheries, petroleum administration, and mineral exploration under the jurisdiction of the Department is evidence of this fact.

The Wilkes-Barre, Pa. Chapter heard a panel discussion entitled "The Three Musketeers of Marketing." The panel included Fred W. Paget, vice president and director of marketing of Carr-Consolidated Biscuit Company who discussed "Marketing and Merchandising," Frank Mahoney, vice president, director and group head and member of the Plans Board of Batton, Barton, Durstine and Osborne. Mr. Mahoney spoke on the "Advertising" angle of marketing. Also on the panel was Fred Brunk, Philadelphia District sales manager of Scott Paper Co. who talked on "Sales Management."

The Lancaster, Pa. Chapter enjoyed an afternoon plant tour through the S. Morgan Smith Company in York, Pa. Ray Dietz, personnel manager of the company was in charge of the tour. In the evening there was a dinner and panel discussion on the subject of "Getting Results Through Communication Of Ideas in An Industrial Organization." The panel speakers were Robert P. Turner, Jr., plant manager, Paul Z. Kistler, director of organization, and Chester A. Lefever, chief engineer, all of the New York Wire Cloth Company. The New York Wire Cloth Company has for the past 12 months been experimenting with numerous scheduled, informal conferences of combined supervisory and rank-and-file employees for the purpose of stimulating ideas and interest in designated company problems and objectives. The panel members told of their experiences in this work and a number of effective ideas which have been produced.

The Wilmington, Del. Chapter was told by William E. Simpkin, Labor Management Arbitrator of Philadelphia that "far-sighted management and labor can and often do set up machinery which

industrial engineer

CENTRAL STAFF

Multi-plant Chemical & Fabricating Company with New England headquarters requires a top-notch Industrial Engineer.

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heads off situations which would require arbitration." Mr. Simpkin advocated a positive approach as a good grievance procedure as he discussed "What Management Can Do To Avoid Arbitration."

The Cleveland, Ohio Chapter heard a very interesting panel session on "Today's Production Control Problems." Panel members were Capt. Donald Inhoff, Chief of Production Service, Cleveland Ordinance District; Harold Kneen, Vice President-Manufacturing, Lincoln Electric Company; and J. L. Wotring, Production Control Manager, Perfection Stove Company.

The question and answer period was very lively, with a large number of questions asked, the answers to which proved very educational.

Capt. Inhoff spoke of the procedures followed in the allocation and coordination of Government defense orders and clarified situations encountered by industries manufacturing those products.

The other two speakers told of the difficulties encountered and the approach used in developing their newly installed production control systems. Both started from scratch and the results proved to be outstanding.

The March 3rd meeting will feature Ralph Presgrave, speaking on the subject "Maintenance of Valid Time Study Standards." A large attendance is anticipated to hear this well-known authority in the field of Industrial Engineering.

The Cincinnati, Ohio Chapter was enlightened by Rear Admiral Frederick J. Bell, USN (Ret.), director of human relations of McCormick & Company, Inc. of Baltimore on the subject of "Multiple Management." McCormick & Company conceived and developed this method of improving efficiency and of using the abilities and energies of their younger men. There are many advantages to this method as top level thus is able to use the creative ability and new thinking that is always present in varying degrees among its second and third levels of supervising management. Admiral Bell has helped McCormick to further perfect this program and was most able to bring the top thoughts to the audience. Multiple management's features are a fair day's pay for a fair day's work, security, opportunity, participation, and recognition.

The Richmond, Va. Chapter had as its speaker George Dlesk, industrial engineering manager of the American Box Board Company of Grand Rapids, Mich. who discussed "Incentives for Indirect Labor." The guest chairman for the evening was Henry G. Chesley, president of Wilson Paper Box Company.

The Milwaukee, Wis. Chapter had a Past Presidents' Night with Frazier D. MacIver, executive vice president of Phoenix Hosiery Company as the main speaker. Mr. MacIver presented a discussion on "Industry's Responsibility Toward Education." Industry is finding an ever-increasing need for trained personnel. The most logical source lies in the colleges and universities. To promote specialized training and research activities, industry has found it advantageous to establish foundations and trust funds to support those schools. The mutual benefits of this association are given very little publicity so Mr. MacIver pointed out the far reaching effects of industry's support to education.

The Detroit, Mich. Chapter heard James M. Apple, associate professor of mechanical engineering of Michigan State College discuss "Plant Layout and Materials Handling." Industry today is confronted with problems of reducing some departments, enlarging, adding to, moving, or creating new departments, and even planning new plants. With a change in emphasis from civilian to war production, Professor Apple's discussion was most timely. He outlined and illustrated the steps necessary in industrial plant layout and the tools available for effective plant layout.

The Indianapolis, Ind. Chapter was instructed by Robert C. Rick, senior staff engineer of A. T. Kearney & Company of Chicago, Ill. on the subject of "Organizing a Cost Conscious Team For Competitive Times." Rather than stressing any one technique of cost reduction, Mr. Rich showed how all are used and how they are coordinated into an organized program for effective results using specific cases to illustrate his points.

The Asheville, N. C. Chapter featured a meeting on budgetary control for plant maintenance. E. O. Dean, supervisor of the maintenance group in the du Pont Company's engineering service division, led the discussion. Dean was assisted by several outstanding financial control men and maintenance engineers in that area. Among those on the panel were Willis Kirkpatrick, management coordinator at the Champion Paper and Fibre Co.; Paul Green, plant maintenance engineer at American Enka Corp.; Dick Pierce, cellophane maintenance engineer at Ecusta Paper Corp.; R. M. Wise, plant engineer at the Dayton Rubber Company in Waynesville; Earl Milligan, maintenance engineer at Sayles-Biltmore Bleacheries; and R. L. Gaffney, maintenance engineer at the Cranston Print Works. The panel also included representatives from the Morgan Manufacturing Company and the Robotyper Corporation in Hendersonville.

The Trenton, N. J. Chapter heard a discussion by J. Orvis Keller, assistant to the President of the Pennsylvania State College. Mr. Keller's topic was "The Organization Chart—Is The Tree Above Your Plant's Roots — Is It Healthy". The monthly round table discussions covered the subjects of "The Chief Industrial Engineer's View Point" and "The Safety Engineer's View Point".

The Western Massachusetts Chapter was instructed by Andrew B. Holstrom, Mayor of Worcester, Mass. and vice president of the Norton Company. Mr. Holstrom's subject was "Sound Business Management Applied to Municipal Government".

The Montreal Chapter was informed by Maxwell Cohen, secretary of the Faculty of Law of McGill University who talked on "Arbitration—The Role of the Single Arbitrator in Contract Observance Disputes".

The Boston, Mass. Chapter heard a round table discussion on "Incentives" by Paul D. Hoover, Standard Duplicating Machine Corp., Joseph Scanlon, Consultant, and E. Willard Gardiner of Sears, Roebuck Co.

The Dallas, Texas Chapter was entertained by George Crews McGhee, the Assistant Secretary of State for the Near East, South Asian and African Affairs. Mr. McGhee spoke with authority on the subject of "Foreign Relations in The Near East".

The Management Bookshelf

Air Transportation Management—Its Practices and Policies by JOSEPH L. NICHOLSON, published by John Wiley & Sons, Inc., New York, N. Y., 441 pages, $6.50.

UNDOUBTEDLY THE AUTHOR intended to produce a standard reference work that would reach the Aviation Industry. If that was his sole objective, he has overshot his target by a considerable margin. There is much food for thought in this volume for executives whose business affairs are in any way subject to government regulation. In modern times this means almost every industrial executive will find some area of interest in this book. The methods, rules and regulations by which the Civil Aeronautics Board directs the operation of the Air Transportation Industry may appear very frightening to some of the executives. This is particularly true to some executives of businesses not so regulated.

Transportation has long been closely regulated by the Federal Government. Early regulatory policies to govern American railroads were largely directed at restraint of the industry and protection of the public from the evils of unrestricted monopoly. The railroad regulatory practice required many years to reach its present state. Here we see a government regulatory body which not only concerns itself with restraint of the industry and protection of the public, but adds to its duties the development and promotion of the aviation industry for the public good.

Regardless of whether the reader agrees with or opposes the philosophy of government-controlled business, he will find much food for thought in reading Mr. Nicholson's volume. The author has rather studiously avoided taking a position for or against the results of airline regulation by the Federal Government. It is difficult to compile a volume of this nature and preserve a neutral attitude, and in this respect the author has acquitted himself very well.

For executives directly concerned with the aviation industry, the book represents a painstaking historical compilation and provides valuable reference material of a statistical nature. Its arrangement for this purpose presents somewhat of an obstacle course to readers who are not interested in air transportation details. To those who are interested in what goes on in an industry regulated to the "nth" degree by the Federal Government, this book will provide many answers.

CHARLES E. DURHAM
Administrative Engineer
McDonnell Aircraft Corp.
St. Louis, Mo.

Quality-Control Handbook. Edited by J. M. JURAN. McGraw-Hill Book Co., Inc., New York, N. Y., 1951. 800 pp., illus., diagrams, charts, tables, $10.00.

Within just the past decade, the science of Quality Control has come to be widely accepted as an important management tool. Much has been written on various single aspects of its development and use but now for the first time, we have a complete reference volume.

Every executive, production supervisor, engineer and student will want to have a copy of this book in his library. If the individual is responsible for thinking out top policies on quality, for establishing quality standards, for organizing for the control of quality, for developing a quality appreciation program, for eliminating causes of rejects or defective work, for improving processes, for building up a quality reputation for a product or company, etc., etc., he can be sure to find many valuable aids and suggestions within its covers.

Forty percent of the Handbook is devoted to the economics of quality, the specification of quality, and the measurement, regulation, and assurance of quality. Another 40 percent covers specific industrial applications in the textile, chemical process, metal trades, aircraft and electronic tube industries. Only one section is concerned with Statistical Quality Control so we might say that this book is more practical than theoretical.

If we really believe "quality must be built into our products" then we'll have to admit that the quality of the product depends on the quality effort of every individual in the plant. The basic problem then is to provide the means, the incentive and the guidance for every employee to make his contribution. This Handbook aims to help the reader find the solution for his own organization and we think it does a highly creditable job in more ways than one.

We should mention, too, that Dr. Juran's Handbook is more than what the name implies. This Handbook has not only a wealth of information and a very detailed reference index but it is easy and interesting to read. The elimination of small type, the use of larger pages, and more than 300 large illustrations (many full scale), charts, tables, etc., help to carry its message.

The Publisher, the Editor and the contributing authors are, in our opinion, to be commended for their efforts in bringing us so much material, so well written and so ably arranged as to establish a new standard for Handbooks of the future.

R. F. HURST
Vice President
Bigelow-Sanford
Carpet Co., Inc.

The House of Labor, edited by J. B. S. HARDMAN AND MAURICE NEUFELD, Prentice-Hall, N. Y., 1951, 546 pages, $7.65.

This book is somewhat difficult to classify. It is certainly not a research monograph. Nor is it a textbook. It comes closest to being a handbook on American trade-unionism; and it has to be judged in that context.

The fifty-odd contributors to this volume come from the labor movement, government service, and the academic fold. Each of the authors has written on that phase of trade-unionism with which he is most familiar. And the topics treated cover: trade-union leadership, political action, international relations, public re-